

## CLAIMS

1. A method for displaying pictures, said method comprising:

fetching a portion of a picture being stored in a frame buffer, the portion of the picture stored with a byte order;

converting the byte order of the portion of the picture to a predetermined byte order, the byte order being different from the predetermined byte order; and

storing the portion of the picture in another buffer with the predetermined byte order.

2. The method of claim 1, wherein the predetermined order is selected from a group consisting of big endian byte order and little endian byte order.

3. The method of claim 1, further comprising:

providing an indicator indicating whether the byte order is different or opposite from the predetermined order.

4. The method of claim 3, further comprising:

swapping a first pixel from the portion of the picture and a second pixel from the portion of the picture if the indicator indicates that the byte order is different or opposite from the predetermined order; and

swapping a third pixel from the portion of the picture and a fourth pixel from the portion of the picture if the indicator indicates that the byte order is different or opposite from the predetermined order.

5. A system for displaying pictures, said system comprising:

a first circuit for fetching a portion of a picture stored in a frame buffer, the portion of the picture being stored with a byte order;

a second circuit for converting the byte order of the portion of the picture to a predetermined byte order, the byte order being different from the predetermined byte order; and

a buffer for storing the portion of the picture with the predetermined byte order.

6. The system of claim 5, wherein the predetermined order is selected from a group consisting of big endian byte order and little endian byte order.

7. The system of claim 5, further comprising:

a state machine for providing an indicator indicating whether the byte order is different or opposite from the predetermined order to the second circuit.

8. The system of claim 7, wherein the second circuit further comprises:

a first multiplexer for selecting one of a first pixel of the portion of the picture and a second pixel of the portion of the picture;

a second multiplexer for selecting another of the first pixel of the portion of the picture and a second pixel of the portion of the picture, from the first multiplexer;

a third multiplexer for selecting one of a third pixel of the portion of the picture and a fourth pixel of the portion of the picture;

a fourth multiplexer for selecting another of the third pixel of the portion of the picture and the fourth pixel of the portion of the picture, from the third multiplexer;

a fifth multiplexer for multiplexing outputs from the first multiplexer, the second multiplexer, the third multiplexer, and fourth multiplexer; and

the selections of the first multiplexer, the second multiplexer, the third multiplexer, and the fourth multiplexer being controlled by the indicator provided by the state machine.

9. A method for displaying pictures, said method comprising:

fetching a portion of a picture stored in a frame buffer, the portion of the picture being stored with a pixel order;

converting the pixel order of the portion of the picture to a predetermined pixel order; and

storing the portion of the picture in another buffer with the predetermined pixel order.

10. The method of claim 9, further comprising:

rearranging a plurality of pixels from the portion of the picture in a plurality of different pixel orders;

receiving an indicator indicating the pixel order; and

selecting the pixels rearranged in one of the plurality of different pixel orders based on the indicator indicating the pixel order.

11. A system for displaying pictures, said system comprising:

an input data write unit for fetching a portion of a picture stored in a frame buffer, the portion of the picture being stored with a pixel order;

a circuit for converting the pixel order of the portion of the decoded picture to a predetermined pixel order; and

a buffer for storing the portion of the picture with the predetermined pixel order.

12. The system of claim 11, wherein the circuit further comprises:

a demultiplexer for separating a plurality of pixels from the portion of the picture;

a plurality of multiplexers for combining the separated plurality of pixels in a corresponding plurality of pixel orders; and

another multiplexer for selecting an output from one of the plurality of multiplexers, based on an indicator indicating the pixel order provided by the state machine.

13. A method for displaying pictures, said method comprising:

- fetching a portion of a picture stored in a frame buffer, said portion of the picture comprising a plurality of pixels;

- storing luma pixels in a luma pixel register, if the plurality of pixels comprise luma pixels;

- storing chroma pixels in a chroma pixel register, if the plurality of pixels comprise chroma pixels; and

- storing the contents of the chroma pixel register in one portion of another buffer and the contents of the luma pixel register in another portion of the another buffer.

14. The method of claim 13, wherein storing the luma pixels in the luma pixel register further comprises:

- receiving the plurality of pixels; and

- providing the luma pixels to the luma pixel register, if the plurality of pixels comprise luma pixels.

15. The method of claim 13, wherein storing the luma pixels in the luma pixel register further comprises:

- receiving the plurality of pixels over a first path;

- receiving a portion of the plurality of pixels over a second path;

- selecting the plurality of pixels from the first path, if all of the plurality of pixels are luma pixels; and

- selecting the portion of the plurality of pixels from the second path, if a portion of the plurality of pixels are luma pixels and another portion of the plurality of pixels are chroma pixels.

16. The method of claim 13, wherein storing chroma pixels in the chroma pixel register further comprises:

receiving the plurality of pixels; and

providing the chroma pixels to the chroma pixel register, if the plurality of pixels comprise chroma pixels.

17. The method of claim 13, wherein storing the chroma pixels in the chroma pixel register further comprises:

receiving the plurality of pixels over a first path;

receiving a portion of the plurality of pixels over a second path;

selecting the plurality of pixels from the first path, if all of the plurality of pixels are chroma pixels; and

selecting the portion of the plurality of pixels from the second path, if a portion of the plurality of pixels are chroma pixels and another portion of the plurality of pixels are luma pixels.

18. The method of claim 13, wherein storing chroma pixels in the chroma pixel register further comprises:

receiving the plurality of pixels;

providing chroma Cr pixels to a chroma Cr pixel register, if the plurality of pixels comprise chroma Cr pixels; and

providing chroma Cb pixels to a chroma Cb pixel register, if the plurality of pixels comprise chroma Cb pixels.

19. The method of claim 13, wherein storing the chroma pixels in the chroma pixel register further comprises:

receiving the plurality of pixels over a first path;

receiving a portion of the plurality of pixels over a second path;

selecting the plurality of pixels from the first path, if all of the plurality of pixels are chroma pixels; and

selecting the portion of the plurality of pixels from the second path, if a portion of the plurality of pixels are chroma pixels and another portion of the plurality of pixels are luma pixels.

20. The method of claim 19, further comprising:

storing at least one of the plurality of pixels in a chroma Cr pixel register, if the plurality of pixels are selected;

storing at least one of the plurality of pixels in a chroma Cb pixel register, if the plurality of pixels are selected;

storing at least one of the pixels from the portion of the plurality of pixels from the second path in the chroma Cr pixel register, if the portion of the plurality of pixels are selected; and

storing at least one of the pixels from the portion of the plurality of pixels from the second path in the chroma Cb pixel register, if the portion of the plurality of pixels are selected.



21. A system for displaying pictures, said system comprising:

a first circuit for fetching a portion of a picture stored in a frame buffer, the portion of the picture comprising a plurality of pixels;

a luma pixel register for storing luma pixels, if the plurality of pixels comprise luma pixels;

a chroma pixel register for storing chroma pixels, if the plurality of pixels comprise chroma pixels; and

another buffer for storing the portion of the picture.

22. The system of claim 21, further comprising:

a first multiplexer for receiving a first portion of the plurality of pixels over a first path, and for receiving a second portion of the plurality of pixels over a second path, the first multiplexer associated with a first portion of the luma pixel register;

a second multiplexer for receiving a remainder of the plurality of pixels from the first portion of the plurality of pixels over a first path, and for receiving the second portion of the plurality of pixels, the second multiplexer associated with a second portion of the luma pixel register; and

the first multiplexer provides the portion of the plurality of pixels to the first portion of the luma pixel register and the second multiplexer provides the remainder of the plurality of the pixels to the second portion of the luma pixel register if the portion of the plurality of pixels and the remainder of the plurality of pixels comprise luma pixels;

the state machine selects one of the first multiplexer and the second multiplexer, the selected one of the multiplexers providing the second portion of the pixels to the associated portion of the luma pixel register, if the plurality of pixels comprise luma and chroma pixels.

23. The system of claim 21, further comprising:

a first multiplexer for receiving a first portion of the plurality of pixels over a first path, and for receiving a second portion of the plurality of pixels over a second path, the first multiplexer associated with a first portion of the chroma pixel register;

a second multiplexer for receiving a remainder of the plurality of pixels from the first portion of the plurality of pixels over a first path, and for receiving the second portion of the plurality of pixels, the second multiplexer associated with a second portion of the chroma pixel register; and

the first multiplexer provides the portion of the plurality of pixels to the first portion of the luma pixel registers and the second multiplexer provides the remainder of the plurality of the pixels to the second portion of the luma pixel register if the portion of the plurality of pixels and the remainder of the plurality of pixels comprise chroma pixels;

the state machine selects one of the first multiplexer and the second multiplexer, the selected one of the multiplexers providing the second portion of the plurality of pixels to the associated portion of the luma pixel register, if the plurality of pixels comprise luma and chroma pixels.